

without the doctor understanding the basis on which they are doing this.

In Connell *et al*'s qualitative study,¹³ the key beliefs that influence black African Caribbean peoples self-management of hypertension are outlined. A key role of qualitative studies within health services research could be to inform clinicians about cultural and sub-cultural beliefs that influence health, health behaviour and healthcare seeking behaviour, especially beliefs that may not be familiar to the clinician. Qualitative research can elicit views from patients that they might not raise within the consultation, allowing doctors to understand health and health-seeking behaviour and to tailor their own health advice accordingly. Connell *et al*'s paper is a prime example of how qualitative work could inform clinicians. In principle, this should enable clinicians to tailor their advice in the knowledge of their potential beliefs and practices. Yet the publication of similar findings 17 years ago suggests that such beliefs are deeply held.¹⁴ It also suggests that clinicians may not have addressed the relevant beliefs and practices in their advice to black African Caribbean patients regarding hypertension following the earlier publication.¹⁴ This may partly be a problem of dissemination in that the earlier paper was published in a journal unlikely to be read by most GPs. It may also reflect the difficulty in changing clinician behaviour and influencing patients beliefs and behaviour.

How to encourage clinicians to incorporate research findings into routine practice is a question that is only partially answered. Harmsen *et al*'s paper¹⁵ suggests that interventions regarding transcultural communication need to be directed towards both patient and clinician for change to occur. They report on the findings of their

randomised controlled trial aiming to improve transcultural communication. The intervention encouraged patients to voice misunderstandings and disagreements. It also provided intercultural training comprised of reflecting on one's own culturally determined views and increasing sensitivity and information about patients' cultural beliefs. A benefit in the primary outcome 'perceived mutual understanding' was demonstrated at 6 months as well as one of the secondary outcomes 'perceived quality of care'. These findings are encouraging and suggest that improvements in transcultural communication are possible.

Thus, the studies in this month's Journal^{6,13,15} give some cause for greater optimism regarding transcultural communication and the means to improve this. The ethnically diverse nature of many countries renders effective undergraduate and postgraduate training in transcultural communication important. Some studies suggest that interventions directed towards patients in encouraging greater assertion during consultations improved diabetic control and blood pressure.¹⁶ Future randomised controlled trials could usefully assess the impact of improved transcultural communication on compliance or biological outcomes. Robust evaluation of the links between patient evaluations regarding quality of primary care and compliance or biological outcomes also remain, largely, uncharted territory.⁴

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REFERENCES

1. General Medical Council. *Good medical practice*. 3rd edn. London: General Medical Council, 2001.
2. General Medical Council. *Duties of a doctor*. London: General Medical Council, 2002.

3. Campbell JL, Ramsay J, Green J. Age, gender and socioeconomic and ethnic differences in patient assessments of primary health care. *Qual Health Care* 2001; **10**: 90–95.
4. Little P, Everitt H, Williamson I, *et al*. Observational study of effect of patient centredness and positive approach on outcomes of general practice consultations. *BMJ* 2001; **323**: 908–911.
5. Pilgrim S, Fenton T, Hughes C, *et al*. *The Bristol black and ethnic minorities health survey report*. Bristol: University of Bristol, 1993.
6. Ogden J, Jain A. Patients' experiences and expectations of general practice: a questionnaire study of differences by ethnic group. *Br J Gen Pract* 2005; **55**: 351–356.
7. Free C, McKee M. Meeting the needs of black and ethnic minority groups. *BMJ* 1998; **316**: 380.
8. Free C, White P, Shipman C, Dale J. Access to and use of out of hours services by Vietnamese community groups in South London: a focus group study. *Fam Pract* 1999; **16**: 369–374.
9. Smaje C. *Health 'race' and ethnicity — making sense of the evidence*. London: Kings Fund Institute, 1995.
10. Pendleton D, Schofield T, Tate P, Havelock P. *The consultation — an approach to learning and teaching*. Oxford General Practice series 6. Oxford: Oxford University Press, 1994.
11. Fuller J, Toon P. *Medical practice in a multicultural society*. London: Heinemann Medical Books, 1988.
12. Benson J, Britten N. Patients' decisions about whether or not to take antihypertensive drugs: qualitative study. *BMJ* 2002; **325**: 873.
13. Connell P, McKevitt C, Wolfe C. Strategies to manage hypertension: a qualitative study with black Caribbean patients. *Br J Gen Pract* 2005; **55**: 357–361.
14. Morgan M, Watkins C. Managing hypertension — beliefs and responses to medication among cultural groups. *Sociol Health Illness* 1988; **10**(4): 561–578.
15. Harmsen H, Bernsen R, Meeuwesen L, *et al*. The effect of educational intervention on intercultural communication. Results of a randomised controlled trial. *Br J Gen Pract* 2005; **55**: 343–350.
16. Greenfield S, Kaplan S, Ware J. Expanding patient involvement in care. Effects on patient outcomes. *Ann Int Med* 1985; **102**: 520–528.

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National Programme for IT: the £30 billion question

The National Programme for IT (NPfIT) for health and social services in England has an anticipated cost of around £30 billion. The world's largest ever IT project aims to

provide 'Better information for health, where and when it's needed'. The core strategy is 'to take greater central control over the specification, procurement,

resource management, performance management and delivery of the information and IT agenda'.¹ Its top priorities are listed in Box 1.¹ Few would

question the programme's high-level intentions. Virtually every general practice in the UK is now computerised. A rapidly increasing proportion of all practice team members, not just GPs, use computers face to face with patients every day. Arguably, UK general practice leads the way in the use of computers to support patient care. Yet, as evidenced by the medical tabloids, this key stakeholder group has become alienated and marginalised.

The explanation for this lies in part with ownership and control. The NHS struggles to throw off its image as a 'command-economy state organisation'² but NPfIT, which is run under firm central controls to very tight deadlines, perpetuates that image. Until recently, GPs owned their computer systems. Over more than 20 years these systems have become feature rich in response to user driven innovation. At many sites, electronic information systems and the administrative processes of running a practice have become highly interdependent. Suddenly, ownership has been taken away and procurement of all replacement systems placed in the hands of local service providers. These new people have little or no experience of the general practice domain. They are charged with providing NHS-wide integrated systems to deliver NPfIT priorities. The future of existing general practice systems, upon which GPs are increasingly dependent for delivering care and generating their income, remains unclear. There is little confidence in the quality of replacement systems, partly because what does not yet exist cannot be assessed and partly because there is a widespread perception that knowledge built up through many years of experience is not being harnessed. There is a fear that existing systems will be uprooted at short notice to be replaced with 'new' systems, resulting in severe disruption of vital practice processes. There are further fears that painstakingly collected clinical information will be lost or corrupted during this process, putting continuity of care and patient safety at risk.

In the 1980s Zuboff studied the sociological effects of introducing IT into Canadian pulp mills.³ She recognised

three different phases: automating, 'informing' and transforming. Years ago, most UK general practices automated repetitive tasks, such as repeat prescribing and patient recalls, but systems evolved beyond this to become increasingly active and participative. They now deliver valuable, timely information about the workings of the practice. They 'inform' the practice; better 'whole system' familiarity leads to better decision making at practice level. However, this evolution has gone further still in about half of all UK practices where patient records are electronic rather than paper-based. Work processes have been 'transformed' as the computer and human parts of the system have grown into each other to become inseparable.

Zuboff observed the changing balance of skills, knowledge, and authority that occurred between workers and managers and the impact of different management styles. She made the point that the culture in 'informed' organisations tended to favour learning and innovation.³ Schein later went on to distinguish between the visions of 'informing up', which is about using IT 'to aggregate and centralise as much information as possible about all parts of the organisation, in order to facilitate planning and control by top management', and 'informing down', where system design 'forces an analysis of the core production and other processes of the organisation' so that 'workers become familiar with the whole process

and can thus make decisions that previously were made by various layers of management'.⁴ NPfIT is perceived to be 'aggregation and centralisation' writ large with the threat that 'informing up' will be dominant along with central control and micro-management. Poor communication with the professions has contributed to this perception.

In examining cases of IT implementation failure Schein characterised senior management cultures between the two extremes depicted by McGregor's Theory X and Theory Y.⁵ Theory X depicts a hierarchical authoritarian control orientation and Theory Y depicts a belief in collegial or participative relationships that permit high degrees of self-control. A Theory X management orientation has very negative implications for the success of 'informing up' or 'down' and 'transformation' is simply not feasible. In contrast, a Theory Y orientation has positive implications for the success of 'informing up' and very positive implications for 'informing down' and for 'transformation'.⁴ NPfIT has until recently shown scant enthusiasm for participative relationships. It displays a deterministic approach that sees IT as an external force for change and tends to view those with dissident views as being passive, resistant, or dysfunctional. A more participative sociotechnical approach⁶ such as that loosely described as actor network theory⁷ is long overdue.

We live in a networked world where

Box 1. National Programme for IT – top priorities.¹

- ▶ A centrally managed email and directory service: free to all NHS organisations
- ▶ NHS Care Records Service: where every patient's medical record will be held electronically. To become available securely and safely online and to be easily accessible to healthcare professionals and patients, whenever and wherever it is needed
- ▶ Choose and Book: to facilitate booking of appointments 'without sending referral letters to hospitals and waiting for a reply'
- ▶ Electronic transmission of prescriptions
- ▶ New National Network: 'with sufficient connectivity and broadband capacity to meet current and future NHS needs'
- ▶ Quality Management and Analysis System: to support the quality and outcomes framework of the new contract for GPs
- ▶ Picture Archiving and Communications Systems: 'to capture, store, distribute and display static or moving digital medical images'

increasingly large amounts of data can be exchanged almost instantly regardless of distance and time. Flows require three elements. There must be at least two 'nodes', a 'commodity' that they wish to 'trade', and a transport medium that is fit for purpose. Exchange is most effective and meaningful where the nodes involved share cultural and organisational context. The most successful will develop many links and the more important the flows the greater the tendency for the nodes involved to become culturally closer.⁸ A modern general practice would represent a very busy node, typically transacting most of its business directly with other nodes close to home. This is at variance with the NPfIT paradigm of a remote central record that takes no account of the importance of culture, context, and proximity.

The further medical information travels away from its origin, the more difficult it becomes to make reliable sense of it.⁹ First, the completeness and accuracy of the information at its origin should not be taken for granted.¹⁰⁻¹² Second, to communicate effectively we need information with its all-important context¹³ and not just 'data'. Some of that context is cultural and not captured in the electronic record at all,¹⁴ and some may be just the kind of information that patients will be reluctant to share with us if they are worried that it is destined to become widely accessible.¹⁵ Reliable communication of meaning over distance is therefore problematic, with further implications for patient safety and confidence.

Respect for patient autonomy and confidentiality underpin patient-doctor trust. However, in a networked society it is becoming increasingly difficult to maintain information privacy without making information inaccessible. Rather than continue to treat this as an issue for individual patients and professionals, it may be time to consider new models that depend on tight codes of accepted behaviour applied to whole organisations and underpinned by surveillance. Health care is increasingly provided by teams of professionals where individuals may have multiple and changing roles, in some of which they may have a legitimate need to access personal information about a patient. In response to this major

challenge, NPfIT is instituting role-based access controls coupled with the principle of 'legitimate relationship'. The details of every incidence of access of a patient's record will be captured in an audit trail and there will be tough surveillance procedures to check for abuses.

Many of the concerns expressed in this article arise because the people, organisations and technology that deliver health care together make up an unpredictable complex adaptive system.¹⁶ Thus far, NPfIT seems to have adopted a rational and deterministic approach to management. It systematically gathered and analysed facts to produce an output-based specification and then set clear objectives with tight deadlines.¹⁷ This 'well-oiled machine' is now driving IT into the health system. That may be fine to get the technology in place, but much more than just IT is required.¹⁸ The impact on patients and professionals has yet to be seriously addressed.^{12,19} A very different approach is needed to nurture culture change. We will need to feel trusted, to be encouraged to experiment in a system that encourages innovation and learning from mistakes. With powerful 'informing' systems, we should be well equipped to adapt quickly to change²⁰ and be able to transform the way we work to provide truly patient-centred care. The £30 billion question is not just whether NPfIT will get the technology right but whether it can also win the hearts and minds of the people on whom the NHS depends every day.

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REFERENCES

1. Department of Health. National Programme for IT in the NHS. <http://www.npfit.nhs.uk> (accessed 4 Apr 2005).
2. Browne A. Why the NHS is bad for us. *The Observer*, 7 Oct 2001. <http://society.guardian.co.uk/nhsperformance/comment/0,,565319,00.html> (accessed 8 Apr 2005.)
3. Zuboff S. *In the age of the smart machine: the future of work and power*. Philadelphia: Basic Books; 1988.
4. Schein EH. Innovative cultures and organisations. In: Allen TJ, Scott Morton MS (eds). *Information technology and the corporation of the 1990s. Research studies*. Oxford: Oxford University Press; 1994. 125-148.
5. McGregor D. *The human side of enterprise*. New York: McGraw-Hill, 1960.

6. Anderson JG, Aydin CE. Overview. Theoretical perspectives and methodologies for the evaluation of health care information systems. In: Anderson JG, Aydin CE, Jay SJ (eds). *Evaluating health care information systems: methods and applications*. London: Sage Publications Ltd, 1994.
7. Berg M, Aarts J, van der LJ. ICT in health care: sociotechnical approaches. *Methods Inf Med* 2003; 42(4): 297-301.
8. Castells M. *The information age: economy, society and culture*. Oxford: Blackwell; 1996.
9. Berg M, Goorman E. The contextual nature of medical information. *Int J Med Inf* 1999; 56(1-3): 51-60.
10. Hamilton WT, Round AP, Sharp D, Peters TJ. The quality of record keeping in primary care: a comparison of computerised, paper and hybrid systems. *Br J Gen Pract* 2003; 53(497): 929-933.
11. Ward L, Innes M. Electronic medical summaries in general practice — considering the patient's contribution. *Br J Gen Pract* 2003; 53(489): 293-297.
12. Pyper C, Amery J, Watson M, Crook C. Patients' experiences when accessing their on-line electronic patient records in primary care. *Br J Gen Pract* 2004; 54(498): 38-43.
13. Checkland P, Holwell S. *Information in support of action. Information, systems and information systems. Making sense of the field*. Chichester: John Wiley and Sons, 1998. 85-124.
14. Berg M, Toussaint P. The mantra of modeling and the forgotten powers of paper: a sociotechnical view on the development of process-oriented ICT in health care. *Int J Med Inform* 2003; 69(2-3): 223-234.
15. Robinson P. How do we set the records straight? *BMJ* 2005; 330(7486): 315.
16. Plsek PE, Greenhalgh T. Complexity science: the challenge of complexity in health care. *BMJ* 2001; 323(7313): 625-628.
17. Parker D, Stacey R. *Chaos, Management and economics*. London: Institute of Economic Affairs; 1994.
18. Parliamentary Office of Science and Technology. *Government IT reports*. POST report 200. London: Parliamentary Office of Science and Technology, 2003.
19. Shaw N, Hegedus G. The National Programme for Information Technology: the GP as gatekeeper — a bastion worth fighting for? *Br J Gen Pract* 2005; 55(511): 85-86.
20. Boisot M. Preparing for turbulence: the changing relationship between strategy and management development in the learning organisation. In: Garratt B ed. *Developing strategic thought. Rediscovering the art of direction-giving*. London: Harper Collins; 1996. 35-56.

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